SEQUENCE LISTING

<110> Spertini, Francois
Corthesy, Blaise

<120> Allergen Peptide Fragments and Use Thereof

<130> 25720-502

<140> 10/799,514
<141> 2004-03-12

<150> 60/455,004
<151> 2003-03-14

<160> 23

<170> PatentIn Ver. 2.1

<210> 1
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Peptide

<400> 1
Ile Ile Tyr Pro Gly Thr Leu Trp Cys Gly His Gly Asn Lys Ser Ser
1 5 10 15

Gly Pro Asn Glu Leu Gly Arg Phe Lys His Thr Asp Ala Cys Cys Arg
20 25 30

Thr His Asp Met Cys Pro Asp Val Met Ser Ala Gly Glu Ser Lys His
35 40 45

Gly Leu Thr Asn Thr Ala Ser His Thr Arg Leu Ser
50 55 60

<210> 2
<211> 53
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Peptide

<400> 2
Lys His Gly Leu Thr Asn Thr Ala Ser His Thr Arg Leu Ser Cys Asp
1 5 10 15

Cys Asp Asp Lys Phe Tyr Asp Cys Leu Lys Asn Ser Ala Asp Thr Ile
20 25 30

Ser Ser Tyr Phe Val Gly Lys Met Tyr Phe Asn Leu Ile Asp Thr Lys
35 40 45

Cys Tyr Lys Leu Glu
50

<210> 3
<211> 45
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Peptide

<400> 3
Leu Ile Asp Thr Lys Cys Tyr Lys Leu Glu His Pro Val Thr Gly Cys
1 5 10 15

Gly Glu Arg Thr Glu Gly Arg Cys Leu His Tyr Thr Val Asp Lys Ser
20 25 30

Lys Pro Lys Val Tyr Gln Trp Phe Asp Leu Arg Lys Tyr
35 40 45

<210> 4
<211> 134
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Peptide

<400> 4
Ile Ile Tyr Pro Gly Thr Leu Trp Cys Gly His Gly Asn Lys Ser Ser
1 5 10 15

Gly Pro Asn Glu Leu Gly Arg Phe Lys His Thr Asp Ala Cys Cys Arg
20 25 30

Thr His Asp Met Cys Pro Asp Val Met Ser Ala Gly Glu Ser Lys His
35 40 45

Gly Leu Thr Asn Thr Ala Ser His Thr Arg Leu Ser Cys Asp Cys Asp
50 55 60

Asp Lys Phe Tyr Asp Cys Leu Lys Asn Ser Ala Asp Thr Ile Ser Ser
65 70 75 80

Tyr Phe Val Gly Lys Met Tyr Phe Asn Leu Ile Asp Thr Lys Cys Tyr
85 90 95

Lys Leu Glu His Pro Val Thr Gly Cys Gly Glu Arg Thr Glu Gly Arg
100 105 110

Cys Leu His Tyr Thr Val Asp Lys Ser Lys Pro Lys Val Tyr Gln Trp
115 120 125

Phe Asp Leu Arg Lys Tyr
130

<210> 5
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Peptide

<400> 5
Met Gly Val Phe Asn Tyr Glu Thr Glu Ala Thr Ser Val Ile Pro Ala
1 5 10 15

Ala Arg Leu Phe Lys Ala Phe Ile Leu Asp Gly Asp Asn Leu Phe Pro
20 25 30

Lys Val Ala Pro Gln Ala Ile Ser Ser Val Glu Asn Ile Glu Gly Asn
35 40 45

Gly Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Phe Pro
50 55 60

Phe Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Asn Phe
65 70 75 80

Lys Tyr Asn Tyr Ser Val Ile Glu Gly Gly His Pro Val Thr Gly Cys
85 90 95

Gly Glu Arg Thr Glu Gly Arg Cys Leu His Tyr Thr Val Asp Lys Ser
100 105 110

Lys Pro Lys Val Tyr Gln Trp Phe Asp Leu Arg Lys Tyr
115 120 125

<210> 6
<211> 80
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Peptide

<400> 6
Lys Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu
1 5 10 15

Glu Lys Ile Ser Asn Glu Ile Lys Ile Val Ala Thr Pro Asp Gly Gly
20 25 30

Ser Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu
35 40 45

Val Lys Ala Glu Gln Val Lys Ala Ser Lys Glu Met Gly Glu Thr Leu
50 55 60

Leu Arg Ala Val Glu Ser Tyr Leu Leu Ala His Ser Asp Ala Tyr Asn
65 70 75 80

<210> 7
<211> 160
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Peptide

<400> 7
Met Gly Val Phe Asn Tyr Glu Thr Glu Ala Thr Ser Val Ile Pro Ala
1 5 10 15

Ala Arg Leu Phe Lys Ala Phe Ile Leu Asp Gly Asp Asn Leu Phe Pro
20 25 30

Lys Val Ala Pro Gln Ala Ile Ser Ser Val Glu Asn Ile Glu Gly Asn
35 40 45

Gly Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Phe Pro
50 55 60

Phe Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Asn Phe
65 70 75 80

Lys Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu
85 90 95

Glu Lys Ile Ser Asn Glu Ile Lys Ile Val Ala Thr Pro Asp Gly Gly
100 105 110

Ser Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu
115 120 125

Val Lys Ala Glu Gln Val Lys Ala Ser Lys Glu Met Gly Glu Thr Leu
130 135 140

Leu Arg Ala Val Glu Ser Tyr Leu Leu Ala His Ser Asp Ala Tyr Asn
145 150 155 160

<210> 8
<211> 70
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Peptide

<400> 8
Met Ser Trp Gln Thr Tyr Val Asp Glu His Leu Met Ser Asp Ile Asp
1 5 10 15

```
Gly Gln Ala Ser Asn Ser Leu Ala Ser Ala Ile Val Gly His Asp Gly
            20                  25                  30

Ser Val Trp Ala Gln Ser Ser Ser Phe Pro Gln Phe Lys Pro Gln Glu
        35                  40                  45

Ile Thr Gly Ile Met Lys Asp Phe Glu Glu Pro Gly His Leu Ala Pro
    50                  55                  60

Thr Gly Leu His Leu Gly
65                  70
```

<210> 9
<211> 73
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Peptide

<400> 9

```
His Leu Ala Pro Thr Gly Leu His Leu Gly Gly Ile Lys Tyr Met Val
 1               5                  10                  15

Ile Gln Gly Glu Ala Gly Ala Val Ile Arg Gly Lys Lys Gly Ser Gly
            20                  25                  30

Gly Ile Thr Ile Lys Lys Thr Gly Gln Ala Leu Val Phe Gly Ile Tyr
        35                  40                  45

Glu Glu Pro Val Thr Pro Gly Gln Ser Asn Met Val Val Glu Arg Leu
    50                  55                  60

Gly Asp Tyr Leu Ile Asp Gln Gly Leu
65                  70
```

<210> 10
<211> 133
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Peptide

<400> 10

```
Met Ser Trp Gln Thr Tyr Val Asp Glu His Leu Met Ser Asp Ile Asp
 1               5                  10                  15

Gly Gln Ala Ser Asn Ser Leu Ala Ser Ala Ile Val Gly His Asp Gly
            20                  25                  30

Ser Val Trp Ala Gln Ser Ser Ser Phe Pro Gln Phe Lys Pro Gln Glu
        35                  40                  45

Ile Thr Gly Ile Met Lys Asp Phe Glu Glu Pro Gly His Leu Ala Pro
    50                  55                  60
```

```
Thr Gly Leu His Leu Gly Gly Ile Lys Tyr Met Val Ile Gln Gly Glu
 65                  70                  75                  80

Ala Gly Ala Val Ile Arg Gly Lys Lys Gly Ser Gly Gly Ile Thr Ile
                 85                  90                  95

Lys Lys Thr Gly Gln Ala Leu Val Phe Gly Ile Tyr Glu Glu Pro Val
            100                 105                 110

Thr Pro Gly Gln Ser Asn Met Val Val Glu Arg Leu Gly Asp Tyr Leu
        115                 120                 125

Ile Asp Gln Gly Leu
    130
```

<210> 11
<211> 81
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Peptide

<400> 11

```
Thr Asn Ala Cys Ser Ile Asn Gly Asn Ala Pro Ala Glu Ile Asp Leu
  1               5                  10                  15

Arg Gln Met Arg Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys Gly
            20                  25                  30

Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
        35                  40                  45

Ala Tyr Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
    50                  55                  60

Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile
 65                  70                  75                  80

Glu
```

<210> 12
<211> 86
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Peptide

<400> 12

```
Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile Glu Tyr
  1               5                  10                  15

Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr Val Ala
            20                  25                  30
```

```
Arg Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly Ile Ser
         35                  40                  45

Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg Glu Ala
     50                  55                  60

Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile Lys Asp
 65                  70                  75                  80

Leu Asp Ala Phe Arg His
                 85
```

<210> 13
<211> 86
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Peptide

<400> 13

```
Ala Ile Ala Val Ile Ile Gly Ile Lys Asp Leu Asp Ala Phe Arg His
  1               5                  10                  15

Tyr Asp Gly Arg Thr Ile Ile Gln Arg Asp Asn Gly Tyr Gln Pro Asn
             20                  25                  30

Tyr His Ala Val Asn Ile Val Gly Tyr Ser Asn Ala Gln Gly Val Asp
         35                  40                  45

Tyr Trp Ile Val Arg Asn Ser Trp Asp Thr Asn Trp Gly Asp Asn Gly
     50                  55                  60

Tyr Gly Tyr Phe Ala Ala Asn Ile Asp Leu Met Met Ile Glu Glu Tyr
 65                  70                  75                  80

Pro Tyr Val Val Ile Leu
                 85
```

<210> 14
<211> 222
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic Peptide

<400> 14

```
Thr Asn Ala Cys Ser Ile Asn Gly Asn Ala Pro Ala Glu Ile Asp Leu
  1               5                  10                  15

Arg Gln Met Arg Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys Gly
             20                  25                  30

Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
         35                  40                  45
```

```
Ala Tyr Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
     50                  55                  60

Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile
 65                  70                  75                  80

Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
                 85                  90                  95

Val Ala Arg Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
            100                 105                 110

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
        115                 120                 125

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
    130                 135                 140

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Arg Thr Ile Ile Gln
145                 150                 155                 160

Arg Asp Asn Gly Tyr Gln Pro Asn Tyr His Ala Val Asn Ile Val Gly
                165                 170                 175

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
            180                 185                 190

Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile
        195                 200                 205

Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu
    210                 215                 220


<210> 15
<211> 72
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      Peptide

<400> 15
Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
  1               5                  10                  15

Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly
             20                  25                  30

Lys Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Thr Lys
         35                  40                  45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
     50                  55                  60

Val Pro Gly Ile Asp Pro Asn Ala
 65                  70


<210> 16
```

<211> 73
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Peptide

<400> 16
Ser Ile Asp Gly Leu Glu Val Asp Val Pro Gly Ile Asp Pro Asn Ala
1 5 10 15

Cys His Tyr Met Lys Cys Pro Leu Val Lys Gly Gln Gln Tyr Asp Ile
20 25 30

Lys Tyr Thr Trp Asn Val Pro Lys Ile Ala Pro Lys Ser Glu Asn Val
35 40 45

Val Val Thr Val Lys Val Met Gly Asp Asp Gly Val Leu Ala Cys Ala
50 55 60

Ile Ala Thr His Ala Lys Ile Arg Asp
65 70

<210> 17
<211> 136
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Peptide

<400> 17
Leu Val Ala Ala Val Ala Arg Asp Gln Val Asp Val Lys Asp Cys Ala
1 5 10 15

Asn His Glu Ile Lys Lys Val Leu Val Pro Gly Cys His Gly Ser Glu
20 25 30

Pro Cys Ile Ile His Arg Gly Lys Pro Phe Gln Leu Glu Ala Val Phe
35 40 45

Glu Ala Asn Gln Asn Thr Lys Thr Ala Lys Ile Glu Ile Lys Ala Ser
50 55 60

Ile Asp Gly Leu Glu Val Asp Val Pro Gly Ile Asp Pro Asn Ala Cys
65 70 75 80

His Tyr Met Lys Cys Pro Leu Val Lys Gly Gln Gln Tyr Asp Ile Lys
85 90 95

Tyr Thr Trp Asn Val Pro Lys Ile Ala Pro Lys Ser Glu Asn Val Val
100 105 110

Val Thr Val Lys Val Met Gly Asp Asp Gly Val Leu Ala Cys Ala Ile
115 120 125

Ala Thr His Ala Lys Ile Arg Asp
130 135

<210> 18
<211> 195
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Peptide

<400> 18
Met Gly Val Phe Asn Tyr Glu Thr Glu Ala Thr Ser Val Ile Pro Ala
1 5 10 15

Ala Arg Leu Phe Lys Ala Phe Ile Leu Asp Gly Asp Asn Leu Phe Pro
20 25 30

Lys Val Ala Pro Gln Ala Ile Ser Ser Val Glu Asn Ile Glu Gly Asn
35 40 45

Gly Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Phe Pro
50 55 60

Phe Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Asn Phe
65 70 75 80

Lys Tyr Asn Tyr Ser Val Ile Glu Gly Gly His Pro Val Thr Gly Cys
85 90 95

Gly Glu Arg Thr Glu Gly Arg Cys Leu His Tyr Thr Val Asp Lys Ser
100 105 110

Lys Pro Lys Val Tyr Gln Trp Phe Asp Leu Arg Lys Tyr Met Ser Trp
115 120 125

Gln Thr Tyr Val Asp Glu His Leu Met Ser Asp Ile Asp Gly Gln Ala
130 135 140

Ser Asn Ser Leu Ala Ser Ala Ile Val Gly His Asp Gly Ser Val Trp
145 150 155 160

Ala Gln Ser Ser Ser Phe Pro Gln Phe Lys Pro Gln Glu Ile Thr Gly
165 170 175

Ile Met Lys Asp Phe Glu Glu Pro Gly His Leu Ala Pro Thr Gly Leu
180 185 190

His Leu Gly
195

<210> 19
<211> 153
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Peptide

<400> 19
His Leu Ala Pro Thr Gly Leu His Leu Gly Gly Ile Lys Tyr Met Val
1 5 10 15

Ile Gln Gly Glu Ala Gly Ala Val Ile Arg Gly Lys Lys Gly Ser Gly
20 25 30

Gly Ile Thr Ile Lys Lys Thr Gly Gln Ala Leu Val Phe Gly Ile Tyr
35 40 45

Glu Glu Pro Val Thr Pro Gly Gln Ser Asn Met Val Val Glu Arg Leu
50 55 60

Gly Asp Tyr Leu Ile Asp Gln Gly Leu Lys Tyr Asn Tyr Ser Val Ile
65 70 75 80

Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu Lys Ile Ser Asn Glu Ile
85 90 95

Lys Ile Val Ala Thr Pro Asp Gly Gly Ser Ile Leu Lys Ile Ser Asn
100 105 110

Lys Tyr His Thr Lys Gly Asp His Glu Val Lys Ala Glu Gln Val Lys
115 120 125

Ala Ser Lys Glu Met Gly Glu Thr Leu Leu Arg Ala Val Glu Ser Tyr
130 135 140

Leu Leu Ala His Ser Asp Ala Tyr Asn
145 150

<210> 20
<211> 195
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Peptide

<400> 20
Met Ser Trp Gln Thr Tyr Val Asp Glu His Leu Met Ser Asp Ile Asp
1 5 10 15

Gly Gln Ala Ser Asn Ser Leu Ala Ser Ala Ile Val Gly His Asp Gly
20 25 30

Ser Val Trp Ala Gln Ser Ser Ser Phe Pro Gln Phe Lys Pro Gln Glu
35 40 45

Ile Thr Gly Ile Met Lys Asp Phe Glu Glu Pro Gly His Leu Ala Pro
50 55 60

Thr Gly Leu His Leu Gly Met Gly Val Phe Asn Tyr Glu Thr Glu Ala
65 70 75 80

Thr Ser Val Ile Pro Ala Ala Arg Leu Phe Lys Ala Phe Ile Leu Asp
85 90 95

Gly Asp Asn Leu Phe Pro Lys Val Ala Pro Gln Ala Ile Ser Ser Val

```
            100                 105                 110

Glu Asn Ile Glu Gly Asn Gly Gly Pro Gly Thr Ile Lys Lys Ile Ser
        115                 120                 125

Phe Pro Glu Gly Phe Pro Phe Lys Tyr Val Lys Asp Arg Val Asp Glu
    130                 135                 140

Val Asp His Thr Asn Phe Lys Tyr Asn Tyr Ser Val Ile Glu Gly Gly
145                 150                 155                 160

His Pro Val Thr Gly Cys Gly Glu Arg Thr Glu Gly Arg Cys Leu His
                165                 170                 175

Tyr Thr Val Asp Lys Ser Lys Pro Lys Val Tyr Gln Trp Phe Asp Leu
            180                 185                 190

Arg Lys Tyr
        195


<210> 21
<211> 153
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      Peptide

<400> 21
Lys Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu
  1               5                  10                  15

Glu Lys Ile Ser Asn Glu Ile Lys Ile Val Ala Thr Pro Asp Gly Gly
             20                  25                  30

Ser Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu
         35                  40                  45

Val Lys Ala Glu Gln Val Lys Ala Ser Lys Glu Met Gly Glu Thr Leu
     50                  55                  60

Leu Arg Ala Val Glu Ser Tyr Leu Leu Ala His Ser Asp Ala Tyr Asn
 65                  70                  75                  80

His Leu Ala Pro Thr Gly Leu His Leu Gly Gly Ile Lys Tyr Met Val
                85                  90                  95

Ile Gln Gly Glu Ala Gly Ala Val Ile Arg Gly Lys Lys Gly Ser Gly
            100                 105                 110

Gly Ile Thr Ile Lys Lys Thr Gly Gln Ala Leu Val Phe Gly Ile Tyr
        115                 120                 125

Glu Glu Pro Val Thr Pro Gly Gln Ser Asn Met Val Val Glu Arg Leu
    130                 135                 140

Gly Asp Tyr Leu Ile Asp Gln Gly Leu
145                 150
```

<210> 22
<211> 153
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Peptide

<400> 22
Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
1 5 10 15

Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly
20 25 30

Lys Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Thr Lys
35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Thr Asn Ala Cys Ser Ile Asn Gly
65 70 75 80

Asn Ala Pro Ala Glu Ile Asp Leu Arg Gln Met Arg Thr Val Thr Pro
85 90 95

Ile Arg Met Gln Gly Gly Cys Gly Ser Cys Trp Ala Phe Ser Gly Val
100 105 110

Ala Ala Thr Glu Ser Ala Tyr Leu Ala Tyr Arg Asn Gln Ser Leu Asp
115 120 125

Leu Ala Glu Gln Glu Leu Val Asp Cys Ala Ser Gln His Gly Cys His
130 135 140

Gly Asp Thr Ile Pro Arg Gly Ile Glu
145 150

<210> 23
<211> 159
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Peptide

<400> 23
Ala Ile Ala Val Ile Ile Gly Ile Lys Asp Leu Asp Ala Phe Arg His
1 5 10 15

Tyr Asp Gly Arg Thr Ile Ile Gln Arg Asp Asn Gly Tyr Gln Pro Asn
20 25 30

Tyr His Ala Val Asn Ile Val Gly Tyr Ser Asn Ala Gln Gly Val Asp
35 40 45

```
Tyr Trp Ile Val Arg Asn Ser Trp Asp Thr Asn Trp Gly Asp Asn Gly
     50                  55                  60

Tyr Gly Tyr Phe Ala Ala Asn Ile Asp Leu Met Met Ile Glu Glu Tyr
 65                  70                  75                  80

Pro Tyr Val Val Ile Leu Ser Ile Asp Gly Leu Glu Val Asp Val Pro
                 85                  90                  95

Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu Val Lys
            100                 105                 110

Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys Ile Ala
        115                 120                 125

Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met Gly Asp Asp
    130                 135                 140

Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg Asp
145                 150                 155
```